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VIA ELECTRONIC FILING

Ex Parte

Marlene H. Dortch, Secretary Federal Communications Commission 445 Twelfth Street, S.W. Washington, D.C. 20554

Re: TerreStar Corporation Request for Temporary Waiver of Substantial-Service Requirements – WT Docket No. 16-290

Dear Ms. Dortch:

I am counsel for TerreStar Corporation ("TerreStar" or the "Company") in the above-titled matter. In March, my partner Helgi Walker and I met with FCC General Counsel Thomas Johnson to discuss TerreStar's request for an extension or temporary waiver of the FCC's substantial-service requirements with respect to TerreStar's 1.4 GHz licenses. During the meeting, we described the unique circumstances that led to TerreStar's request—most notably, that the Company's planned operations and the operations in the adjacent band were both fully compliant with the FCC's rules, yet it was impossible for both to be deployed due to a problem arising, ultimately, from the FCC's regulatory scheme itself. We explained that granting the request would advance the public interest by allowing the Company to use its licenses to expand the availability of life-saving Wireless Medical Telemetry Services ("WMTS"). And we explained why the decision of the Wireless Telecommunications Bureau ("Bureau") to deny TerreStar's request was unlawful.

We are following up on that conversation to provide certain additional information regarding TerreStar's diligence and its interaction with Bureau staff, and to underscore why denying the Company's request would conflict with the regulatory policies and approach espoused by Chairman Pai and the Administration.

In short, the facts here show that TerreStar has used its time wisely to make productive use of the spectrum, including working constructively with FCC staff and

See Legal Analysis of the Wireless Telecommunications Bureau's Denial of TerreStar's Request for Temporary Waiver or Extension of Substantial-Service Requirements, at 5–7 (attached to Letter from Eugene Scalia, Counsel to TerreStar Corporation, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 16-290 (filed Jan. 29, 2018)) ("TerreStar Legal Analysis").

adjacent spectrum holders to overcome a technical challenge not of its own making, unlike other waiver applicants who simply make poor business judgments. In addition to being fully consistent with the Commission's rules and policies regarding substantial-service requirements, TerreStar's request implicates other important policies of the Commission and the Administration: fair notice; sensibly appraising the costs and benefits of regulatory choices; and fostering economic growth and innovation by, among other things, promoting regulatory consistency and reliability. These considerations counsel strongly in favor of an order granting TerreStar's request, which could also provide an opportunity for the Commission to highlight the unusual circumstances that will support an extension or waiver of substantial-service requirements and, conversely, those that will not.

TerreStar Worked Diligently, In Coordination With The Bureau And Other License Holders, To Make Productive Use Of The Licensed Spectrum Over The Course Of The Initial License Term.

We are submitting with this letter, for inclusion in the record, a timeline reflecting TerreStar's extensive good faith efforts to discharge its substantial-service obligations.

As the timeline illustrates, from 2009 to 2013 the Company diligently pursued its plan to develop a Smart Grid ecosystem, which would have allowed utilities to use TerreStar's 1.4 GHz spectrum to communicate with Smart Grid applications over a widely distributed service area. During those years, TerreStar and Airspan developed and obtained FCC certification for specialized equipment for Smart Grid network service. Along with its partners, the Company also developed an enhanced wireless broadband standard to provide the increased reliability and security that utilities needed to use a Smart Grid service. And TerreStar demonstrated the viability of its Smart Grid ecosystem by leasing its spectrum to utilities, which successfully completed developmental deployments. Moreover, market demand for TerreStar's planned Smart Grid service appeared robust: At the time, the U.S. smart grid market was projected to grow to over \$20 billion by 2017²—bolstered by \$9 billion in public-private investment³—and TerreStar's planned service promised to play an important role in controlling the grid.⁴ Thus, by November 2013, the Company was fully on track (despite an intervening bankruptcy) to market its Smart Grid ecosystem for full nationwide deployment and to timely meet its substantial-service obligations.

As TerreStar's previous filings have explained, the Company was derailed because of interference experienced by sensitive WMTS receivers in the band adjacent to TerreStar's.

² See Research & Markets, Growth Opportunities in US Smart Grid Market 2012–2017: Trends, Forecast, and Market Share Analysis (June 2012), https://www.researchandmarkets.com/research/n7gfc5/growth.

³ U.S. Dep't of Energy, 2014 Smart Grid Report, at i (Aug. 2014), https://www.smartgrid.gov/files/2014-Smart-Grid-System-Report.pdf.

⁴ See id. at 10–11 (describing the need for "RF-based mesh networks" to control the grid).

The timeline further details TerreStar's efforts to accommodate the receivers' sensitivity while still pursuing its Smart Grid service, which ultimately proved impossible.

In September 2015, the Company concluded that the only practicable solution was to use its licenses to provide additional commercial WMTS services, thereby supplementing the WMTS operations in the adjacent band. This was a creative, sensible work-around *to a problem arising from the FCC's own regulatory framework*, as it is an idiosyncrasy in the Commission's rules that resulted in the unusual and unfortunate circumstance of two fully compliant yet incompatible services seeking to operate in neighboring bands.⁵

TerreStar worked constructively with the Bureau on its new plan, as also reflected in the timeline. Beginning in December 2015, TerreStar, FCC staff, and WMTS providers held numerous meetings and calls to resolve what all recognized to be a problem, and devised what all appeared to appreciate as a creative and elegant solution. TerreStar made clear throughout this process that although it could implement its new plan rapidly, it would still need regulatory relief in the form of a waiver or extension. Rather than voice concern, the Bureau negotiated specific proposed benchmarks for the Company to meet during its expected temporary extension. Ultimately, TerreStar committed to provide service to 2,000 Registered Healthcare Facilities within three years.

If its request is granted, TerreStar remains committed to meeting that benchmark within the three-year waiver or extension period. The Company does not anticipate needing any additional extension of time to meet its substantial-service obligations, and this is the only extension that TerreStar has requested.⁶

Denying TerreStar's Request Would Conflict With The Chairman's And The Administration's Stated Regulatory Policies And Goals.

TerreStar has already explained why denying its request for a temporary waiver or extension would be unlawful, and would undermine the Commission's goal of ensuring that spectrum is promptly put to effective use. Denying the request would also conflict with other regulatory policies and objectives promoted by Chairman Pai and the Administration.

⁵ See TerreStar Legal Analysis, at 5–7.

⁶ Cf. Request of Progeny LMS, LLC for Waiver and Limited Extension of Time, Order, 32 FCC Rcd 122, 123–24 ¶¶ 3–4, 135–36 ¶ 27 (WTB 2017) (granting additional extension despite multiple extensions company had already received).

⁷ See TerreStar Legal Analysis, at 15–16 (explaining how denial would frustrate the FCC's goal); 47 U.S.C. § 309(j)(4)(B) (requiring the FCC to "include performance requirements" in its regulations for spectrum auctions "to ensure prompt delivery of service to rural areas, to prevent stockpiling or warehousing of spectrum by licensees or permittees, and to promote investment in a rapid deployment of new technologies and services").

Providing fair notice of regulatory action is a cornerstone of the Administration's regulatory policy. The Chairman has consistently noted the importance of "provid[ing] fair notice to parties of what the law requires," while the Director of the Office of Management and Budget—as well as the Administrator of the Office of Information and Regulatory Affairs—have emphasized that regulated entities should "have the right to know what the rules are before being charged with breaking them." Chairman Pai and other Administration officials have also urged the consideration of costs and benefits before taking regulatory action and, more broadly, have sought to promote a regulatory climate that is receptive—not hostile—to private enterprise, business development, and job creation.

Those principles command approval of TerreStar's request. Two groups of private business interests—TerreStar and the WMTS operators in the adjacent band—identified a problem arising from gaps in the government's regulatory architecture; devised a solution that would enable them to engage in salutary commercial activity that makes full use of available spectrum; and were in active discussions with Commission staff that, through early 2017, gave TerreStar every reason to expect that its planned operations would be approved. The Bureau, for its part, was acting commendably as a regulator, but also as a partner in devising a solution to a problem that arose from no fault of TerreStar or the WMTS operators, and that promised clear public benefits.

It makes no sense to abruptly pull the carpet out from under this enterprise. Doing so would frustrate the reasonable expectations of TerreStar and WMTS operators, and force spectrum to lie fallow for a *longer period* than if an extension or waiver were approved. That action would be unnecessarily hostile to private enterprise, and to business's need to plan its affairs in reliance on guidance it receives from the government.

To be clear: The Commissioners, not the staff, make final decisions for this agency. But when the staff have encouraged and cooperated with regulated entities in solving a regulatory dilemma, the Commissioners should be sharply attentive to the unnecessary costs and frustrated reliance interests associated with toppling over those plans.

It should be noted, finally, that granting TerreStar's request can serve as a means to powerfully illustrate the proper application of the rules and policies regarding substantial-service waivers as recently articulated by the Bureau.¹⁰ TerreStar's unusual and compelling

⁸ Testimony Of Commissioner Ajit Pai Before The Subcommittee On Communications And Technology Of The United States House Of Representatives Committee On Energy And Commerce, "Oversight Of The Federal Communications Commission," at 4 (November 17, 2015), https://apps.fcc.gov/edocs/public/attachmatch/DOC-336418A1.pdf.

⁹ Mick Mulvaney, *The CFPB Has Pushed Its Last Envelope*, Wall St. J. (Jan. 23, 2018).

See Wireless Telecommunications Bureau Reminds Wireless Licensees of Construction Obligations, Public Notice, DA 17-573 (rel. June 12, 2017).

circumstances can stand as a helpful example of the rare set of facts that *will* support a temporary waiver or extension; and an order granting the Company's request can stand as an unassailable (and un-appealable) published decision and precedent that shows how high the bar is set and, by implication, the broad range of shortfalls, justifications, and excuses that will *not* support relief. TerreStar has not, for instance, experimented with various plans as a matter of commercial arbitrage, failed to comply with existing interference rules, or frittered away its license term and come to the Commission at the eleventh hour for an extension. Nor is it seeking a waiver because of its past bankruptcy or the delay caused by federal incumbents' slow clearing of the 1.4 GHz band. Rather, this case is unique, and by demonstrating the public and private interests that *are* sufficient for a waiver or extension, it can stand as a bulwark against requests by entities whose circumstances pale by comparison.

Respectfully, we suggest that instead of unlawfully denying TerreStar's request, the Commission take this opportunity to hold out the Company's diligence, creative problem solving, and commitment to specific performance benchmarks as exemplifying the standard that companies seeking waivers must meet.

* * *

This letter is being filed electronically in accordance with Section 1.1206(b)(2) of the Commission's rules. We remain available to discuss these matters further if that would be helpful.

Respectfully submitted,

Eugene Scalia

Enclosure

CC: Thomas Johnson, General Counsel, FCC

TerreStar Timeline

TerreStar acquires its 1.4 GHz licenses and begins Smart Grid buildout:

2008:

- February 2008: TerreStar acquires the 1.4 GHz licenses from CCTV and EchoStar.
- **November 2008:** TerreStar enters into agreement with Airspan to develop Smart Grid equipment—such as base stations, subscriber units for fixed applications, and a terminal module to support mobile applications—as well as networks for the 1.4 GHz band.

2009:

- January 2009: Protected federal incumbents clear the 1.4 GHz commercial band.
- **January 2009:** TerreStar and its partners begin work on developing an enhanced 802.16 wireless broadband standard to meet the increased reliability and security requirements that would enable utilities to use Smart Grid.
- **February 2009:** TerreStar enters into a spectrum lease agreement with Pepco for developmental use of early 1.4 GHz equipment for Smart Grid.
- March 2009: FCC certifies TerreStar's 1.4 GHz 802.16 subscriber unit for Smart Grid network service. The "EasyST" is designed to be installed in fixed locations by utilities for high bandwidth wireless communications.
- **April 2009:** TerreStar enters into a spectrum lease agreement with Rural Broadband Corporation for developmental use of early 1.4 GHz equipment for Smart Grid.
- **September 2009:** TerreStar enters into a spectrum manager lease agreement with One Dot Four Corp. extending through April 2017 and committing One Dot Four to use TerreStar's 1.4 GHz licenses in a manner that would satisfy TerreStar's substantial-service requirement.
- **September 2009:** FCC certifies TerreStar's 1.4 GHz 802.16 base station for Smart Grid network service. The "MicroMAX" is designed to enable wireless communication with utility services that are distributed over a wide area.
- **September 2009:** FCC certifies an enhanced version of the "EasyST," TerreStar's 1.4 GHz 802.16 subscriber unit for Smart Grid network service.

• **2010**:

- **January 2010:** First 1.4 GHz wireless medical telemetry service ("WMTS") network is deployed.
- October 19, 2010: TerreStar files for bankruptcy.
- October 2010: One Dot Four Corp. enters into an agreement with Airspan to market leased Smart Grid networks to utility companies as final equipment becomes available.

2011:

• May 2011: FCC certifies another enhanced version of TerreStar's 1.4 GHz 802.16 subscriber unit for Smart Grid network service. The "ProST" adds additional features called for by utility subscriber applications.

• May 2011: FCC certifies an enhanced version of TerreStar's 1.4 GHz 802.16 base station for Smart Grid network service. This version of the "MicroMAX" has expanded power ranges and channel options.

2012:

- April–May 2012: TerreStar terminates spectrum manager lease agreement with One Dot Four Corp., and enters into a spectrum lease agreement with FirstEnergy Service Company, a large electrical utility. This agreement allows FirstEnergy to deploy high-powered Smart Grid facilities using TerreStar's 1.4 GHz spectrum. This is viewed as the critical developmental deployment before TerreStar's mobile Smart Grid ecosystem and enhanced wireless broadband standard make full commercial nationwide deployment possible.
- July 2012: FCC certifies TerreStar's 1.4 GHz 802.16 terminal module for Smart Grid network service. The "SSRM" module is designed to support both mobile and fixed utility applications and is the final step in developing an ecosystem that permits a broad array of utility applications to interface with the 1.4 GHz Smart Grid network. The SSRM also enables TerreStar's 1.4 GHz Smart Grid ecosystem to integrate with widely used Cisco Connected Grid systems.

2013:

- March 2013: TerreStar's work on developing the enhanced interface standard needed for Smart Grid operations—which began in January 2009—is codified in the IEEE's 802.16 Air Interface Standard for Higher Reliability Networks. The new standard meets or exceeds the reliability, security, and other requirements that utilities must have to use Smart Grid.
- November 2013: TerreStar twice meets with FCC staff to discuss Smart Grid operations. Having completed the development and certification of a flexible Smart Grid ecosystem, developed the enhanced standards needed by utilities to use Smart Grid networks, and successfully completed developmental deployments, TerreStar is on track to meet the deadline for its substantial-service requirements. Market demand for TerreStar's Smart Grid service offering appears to be robust: The U.S. smart grid market is projected to grow to over \$20 billion over the following five years; a communications network is needed to control the grid; and TerreStar's 1.4 GHz spectrum is the only low frequency, privately available parcel of spectrum with sufficient bandwidth to enable the necessary network.

TerreStar learns of the WMTS interference issues and seeks to find a solution:

• **2013**:

• **December 3, 2013:** In a meeting with FCC staff, TerreStar learns that there may be interference arising between Smart Grid operations and next generation WMTS devices, even if both services fully comply with FCC rules; FCC staff suggest that TerreStar reach out to WMTS device manufacturers to discuss.

2014:

• **February 2014:** TerreStar meets with WMTS representatives, including Philips Healthcare, GE Healthcare, Comsearch, and the American Society for Healthcare Engineering ("ASHE") of the American Hospital Association, to discuss potential

interference between Smart Grid operations and WMTS devices; WMTS representatives state that Smart Grid operations would pose a significant risk to the operation of WMTS devices and thereby present a serious risk to patient health.

- **February 11, 2014:** TerreStar meets with FCC staff to discuss interference concerns expressed by WMTS manufacturers.
- **February–July 2014:** TerreStar instructs its technical consultant, Jarvinian Advisors, to evaluate the risk of interference between Smart Grid operations and WMTS devices; Jarvinian's laboratory and field tests confirm that, even if both services comply with the Commission's rules, interference between Smart Grid operations and WMTS devices would likely have a significant, deleterious impact on life-critical WMTS devices and systems at health care facilities across the United States.
- March 14, 2014: TerreStar files request for an experimental license to study a potential plan to solve the interference problems while still using TerreStar's licenses for Smart Grid operations. The plan would convert TerreStar's existing spectrum to downlink-only and pair it with additional unpaired spectrum that would be uplink-only.
- March 20, 2014: TerreStar meets with FCC staff to discuss proposal to convert TerreStar's spectrum to downlink-only; this proposal would require TerreStar to obtain additional unpaired spectrum, and TerreStar communicates to FCC staff that TerreStar would need a reasonable expectation of regulatory relief before bidding on additional unpaired spectrum.
- April 30, 2014: TerreStar meets with FCC staff to seek assurances that regulatory relief would be available if TerreStar participates in the AWS-3 auction of additional unpaired spectrum.
- June 3, 2014: TerreStar meets with FCC staff to discuss the downlink-only plan and again stresses need for regulatory relief.
- November 13, 2014—January 29, 2015: A TerreStar-affiliated corporation wins \$389 million of additional unpaired spectrum in the AWS-3 auction, but fails to acquire a nationwide footprint of the spectrum. This renders TerreStar's plan to solve the interference problems while using its licenses for Smart Grid operations impossible.

TerreStar concludes that using its 1.4 GHz licenses for WMTS is the only practicable solution and works with the FCC to implement this solution:

- September 2015: After additional internal analysis and discussions with WMTS representatives, TerreStar concludes that the only practicable solution to the interference concerns is to use its spectrum for commercial WMTS.
- **December 18, 2015:** TerreStar meets with FCC staff to inform the FCC of TerreStar's plans to use its spectrum to create additional commercial WMTS bandwidth; TerreStar underscores the need for a temporary waiver of the substantial-service requirements in order to develop its spectrum for use by WMTS devices.

- January 21, 2016: TerreStar meets with National Telecommunications and Information Administration staff to discuss TerreStar's plans to use its spectrum to create additional WMTS bandwidth.
- March 22, 2016: TerreStar meets with FCC staff to further discuss TerreStar's plans to use its spectrum to create additional WMTS bandwidth and to discuss the benefits of additional bandwidth; FCC staff commend the creativity of this plan.
- April 14, 2016: TerreStar and Philips Healthcare meet with FCC staff to provide additional details on plans to use TerreStar's spectrum to create additional WMTS bandwidth; TerreStar and Philips Healthcare review the interference issues and provide specific timelines for deployment; TerreStar explains that the technical attributes of WMTS transceivers that caused the interference (*i.e.*, software-defined architectures with wide passband filters) permit existing networks to rapidly integrate additional spectrum from the adjacent band.
- **June 27, 2016:** TerreStar meets with FCC staff to provide final details on its WMTS plan and to discuss details regarding an extension or temporary waiver of the substantial-service requirements; FCC staff indicate that the waiver would come under the Mobility Division's delegated authority, and that the request would be put on public notice; FCC staff ask TerreStar to submit a request for extension/waiver within 90 days.
- **July 25, 2016:** Pursuant to the FCC staff's direction, TerreStar files its request for an extension or temporary waiver of the substantial-service requirements.
- August 2, 2016: TerreStar calls FCC staff to discuss TerreStar's extension/waiver request; FCC staff suggest revisions to extension/waiver request, primarily suggesting that TerreStar's planned leases of its spectrum be designed with a "spectrum management" structure.
- August 12, 2016: TerreStar files its revised extension/waiver request, incorporating the FCC staff's suggestions.
- October 4, 2016: GE Healthcare and Philips Healthcare each file comments in support of TerreStar's request for an extension or temporary waiver of substantial-service requirements.
- October 4, 2016: ASHE files comments in support of a shorter extension of TerreStar's substantial-service requirements.
- October 14, 2016: Philips Healthcare files reply comments to underscore the interference potential of Smart Grid and the need for expanded WMTS network capacity.
- **November 10, 2016:** ASHE files a letter indicating that they now support the full 36-month waiver requested by TerreStar.
- November 10, 2016: TerreStar and Philips Healthcare meet with FCC staff to discuss TerreStar's extension/waiver request; FCC staff express no objections or concerns with the request and indicate that it is in the "queue" and a decision will be reached by the end of the year; Philips Healthcare underscores the pressing near-term need for this additional WMTS bandwidth to serve hospitals that are at capacity saturation.

• **December 12, 2016:** TerreStar calls FCC staff to discuss the status of TerreStar's extension/waiver request; FCC staff do not report any concerns with the request and say that they expect the request to be acted upon in the coming weeks.

- **February 17, 2017:** TerreStar calls FCC staff to discuss the status of TerreStar's extension/waiver request; FCC staff indicate that the request is being discussed with senior agency management.
- March 22, 2017: TerreStar calls FCC staff to discuss the status of TerreStar's extension/waiver request; FCC staff discuss proposed performance benchmarks that they would like TerreStar to agree to as conditions of the requested relief.
- March 28, 2017: TerreStar calls FCC staff to discuss FCC's proposed performance benchmarks; TerreStar generally agrees with the spirit of the benchmarks, but expresses concern with committing to provide service to "2,000 Registered Healthcare Facilities," noting that there are only about 1,950 Registered Healthcare Facilities in the United States; FCC staff explains that it is important to management that TerreStar meet a high standard.
- March 31, 2017: TerreStar calls FCC staff to discuss FCC's proposed performance benchmarks; TerreStar explains that, after consulting with Philips Healthcare regarding the growth of new WMTS hospitals, it is able to commit to provide service to 2,000 Registered Healthcare Facilities within 36 months; TerreStar asks for 90-day extensions on the early benchmarks due to the delay in granting the extension/waiver, and FCC staff agree this is reasonable.
- April 7, 2017: TerreStar calls FCC staff to check status of its extension/waiver request; FCC staff indicate that a number of items at the agency are moving slowly, but express no cause for concern.
- April 10, 2017: TerreStar receives call from FCC staff reminding TerreStar to file license renewals that refer to TerreStar's extension/waiver request before April 23.
- April 21, 2017: TerreStar files applications for renewal of its licenses in the 1.4 GHz band, subject to the terms of any waiver grant.
- May 12, 2017: TerreStar calls FCC staff to discuss its extension/waiver request; FCC staff indicate that there are concerns at management level about the precedential effect of approving TerreStar's request.
- June 7, 2017: TerreStar files supplemental comments in support of its extension/waiver request.
- June 8, 2017: TerreStar meets with Chairman's Office staff to discuss request.
- June 12, 2017: TerreStar meets with Chairman's Office to discuss request.
- **July 12, 2017:** Steward Health Care System, the largest for-profit hospital operator in the United States, files comments underscoring the interference threat and the need for the expanded medical telemetry spectrum that would be made possible by granting TerreStar's waiver request.
- July 14, 2017: ASHE files supplemental comments in support of TerreStar's request.

- **August 4, 2017:** GE Healthcare files supplemental comments in support of TerreStar's request.
- August 22, 2017: Philips Healthcare files supplemental comments in support of TerreStar's request.

The Wireless Telecommunications Bureau denies TerreStar's request for an extension or temporary waiver of the substantial-service requirements:

2017:

- October 10, 2017: The Wireless Telecommunications Bureau issues order denying TerreStar's request for an extension or temporary waiver of the substantial-service requirements.
- **November 9, 2017:** TerreStar files petition for reconsideration of the Wireless Telecommunications Bureau's order. The petition is unopposed.
- **November 9, 2017**: ASHE, GE Healthcare, and Philips Healthcare file independent petitions for reconsideration of the Wireless Telecommunications Bureau's order. The petitions are unopposed.

- January 29, 2018: TerreStar files ex parte letter providing FCC with legal analysis in support of its request for an extension or temporary waiver of the substantial-service requirements.
- **February 8, 2018:** ASHE meets with FCC commissioners. ASHE underscores the urgent need for expanded 1.4 GHz medical telemetry spectrum, the requirements for interference protection to assure patient safety, and the readiness of WMTS manufacturers to put commercial 1.4 GHz spectrum to immediate use.